

# **Nurses as Champions of Antimicrobial Stewardship**

Eileen J. Carter, PhD, RN

Assistant Professor of Nursing

Columbia University Medical Center

Nurse Researcher

NewYork-Presbyterian Hospital

New York, NY

# DISCLOSURES

- Dr. Carter declares no conflicts of interest, real and apparent, and no financial interests in any company product or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.
- Her presentation will not include discussion of unapproved or investigational uses of products or devices.

# LEARNING OBJECTIVES

At the end of this lecture, the learner will be able to:

- Delineate the range of roles for nurses as set forth in the ANA/CDC joint statement on Antimicrobial Stewardship.
- List 2 or more barriers to the engagement of nurses in antimicrobial stewardship.
- Propose one or more strategies through which nurses can become critical members of the stewardship team.

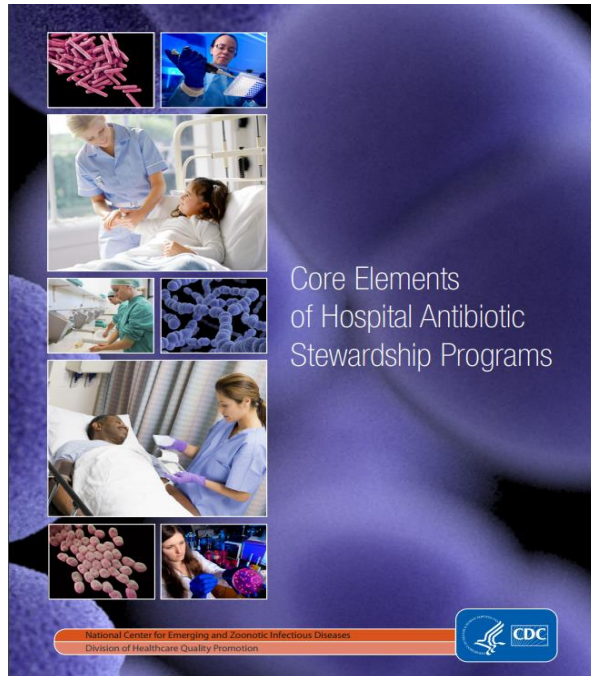
# LIVE Polling

Bedside nurses are active participants in my facilities' antibiotic stewardship program.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

The role of nurses' in antibiotic stewardship programs has been poorly defined.

# CDC – Core Elements of ASPs



KEY SUPPORT FOR THE ANTIBIOTIC STEWARDSHIP PROGRAM		
<i>Does any of the staff below work with the stewardship leaders to improve antibiotic use?</i>		
B. Clinicians	<input type="checkbox"/> Yes	<input type="checkbox"/> No
C. Infection Prevention and Healthcare Epidemiology	<input type="checkbox"/> Yes	<input type="checkbox"/> No
D. Quality Improvement	<input type="checkbox"/> Yes	<input type="checkbox"/> No
E. Microbiology (Laboratory)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
F. Information Technology (IT)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
G. <u>Nursing</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Nurses can assure that cultures are performed before starting antibiotics. In addition, nurses review medications as part of their routine duties and can prompt discussions of antibiotic treatment, indication, and duration.<sup>46, 47</sup>

# Joint Commission ASP Standard

## APPROVED: New Antimicrobial Stewardship Standard

The Joint Commission recently announced a new Medication Management (MM) standard for **hospitals, critical access hospitals, and nursing care centers**. Standard MM.09.01.01 addresses antimicrobial stewardship and becomes effective **January 1, 2017**.

Current scientific literature emphasizes the need to reduce the use of inappropriate antimicrobials in all health care settings due to antimicrobial resistance. According to the World Health Organization (WHO): "Antimicrobial resistance threatens the effective prevention and treatment of an ever-increasing range of infections caused by bacteria, parasites, viruses and fungi."<sup>1</sup> The Centers for Disease Control and Prevention (CDC) identified that 20%–50% of all antibiotics prescribed in US acute care hospitals are either unnecessary or inappropriate.<sup>2</sup> The CDC has also stated: "Antibiotics are among the most commonly prescribed medications in **nursing** homes. Up to 70% of long-term care facilities' residents receive an antibiotic every year."<sup>3</sup>

On June 2, 2015, The Joint Commission participated in the White House Forum on Antibiotic Stewardship. The Joint Commission joined representatives from more than 150 major health care organizations, food companies, retailers, and animal health organizations at the forum to express commitment for implementing changes over the next five years to slow the emergence of antibiotic-resistant bacteria, detect resistant strains, preserve the efficacy of existing antibiotics, and prevent the spread of resistant infections.<sup>4</sup>

Subsequently, The Joint Commission developed the antimicrobial stewardship standard for hospitals, critical access hospitals, nursing care centers, ambulatory care organizations, and office-based surgery practices and conducted a field review in November and December 2015. Prior to and during the field review, Joint Commission staff conducted stakeholder calls on the proposed antimicrobial stewardship standard with several governmental and professional organizations, including the Centers for Medicare

*Continued on page 3*

**Reporting:** Regularly reporting information on the antimicrobial stewardship program, which may include information on antibiotic use and resistance, to doctors, nurses, and relevant staff.

The Joint Commission. (2016). Approved: New Antimicrobial Stewardship Standard. Retrieved from [https://www.jointcommission.org/assets/1/6/New\\_Antimicrobial\\_Stewardship\\_Standard.pdf](https://www.jointcommission.org/assets/1/6/New_Antimicrobial_Stewardship_Standard.pdf)

# IDSA Guidelines & Nursing Involvement in ASPs

## Evidence Summary

Education is a common tool for ASPs. Strategies include educational meetings with didactic lectures and distribution of educational pamphlets and materials. No comparative studies are available to determine which educational strategy is most effective.

Educational strategies should include medical, pharmacy, physician assistant, nurse practitioner, and nursing students and trainees. In a survey of fourth-year medical students at 3

Clinical Infectious Diseases

IDSA GUIDELINE



## Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America

Tamar F. Barlam,<sup>1,a</sup> Sam E. Cosgrove,<sup>2,a</sup> Lilian M. Abbo,<sup>3</sup> Conan MacDougall,<sup>4</sup> Audrey N. Schuetz,<sup>5</sup> Edward J. Septimus,<sup>6</sup> Arjun Srinivasan,<sup>7</sup> Timothy H. Dellit,<sup>8</sup> Yngve T. Falck-Ytter,<sup>9</sup> Neil O. Fishman,<sup>10</sup> Cindy W. Hamilton,<sup>11</sup> Timothy C. Jenkins,<sup>12</sup> Pamela A. Lipsett,<sup>13</sup> Preeti N. Malani,<sup>14</sup> Larissa S. May,<sup>15</sup> Gregory J. Moran,<sup>16</sup> Melinda M. Neuhauser,<sup>17</sup> Jason G. Newland,<sup>18</sup> Christopher A. Ohl,<sup>19</sup> Matthew H. Samore,<sup>20</sup> Susan K. Seo,<sup>21</sup> and Kavita K. Trivedi<sup>22</sup>

<sup>1a</sup>Section of Infectious Diseases, Boston University School of Medicine, Boston, Massachusetts; <sup>2</sup>Division of Infectious Diseases, Johns Hopkins University School of Medicine, Baltimore, Maryland; <sup>3</sup>Division of Infectious Diseases, University of Miami Miller School of Medicine, Miami, Florida; <sup>4</sup>Department of Clinical Pharmacy, School of Pharmacy, University of California, San Francisco; <sup>5</sup>Department of Medicine, Weill Cornell Medical Center/New York-Presbyterian Hospital, New York, New York; <sup>6</sup>Department of Internal Medicine, Texas A&M Health Science Center College of Medicine, Houston; <sup>7</sup>Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia; <sup>8</sup>Division of Allergy and Infectious Diseases, University of Washington School of Medicine, Seattle; <sup>9</sup>Department of Medicine, Case Western Reserve University and Veterans Affairs Medical Center, Cleveland, Ohio; <sup>10</sup>Department of Medicine, University of Pennsylvania Health System, Philadelphia; <sup>11</sup>Hamilton House, Virginia Beach, Virginia; <sup>12</sup>Division of Infectious Diseases, Denver Health, Denver, Colorado; <sup>13</sup>Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University Schools of Medicine and Nursing, Baltimore, Maryland; <sup>14</sup>Division of Infectious Diseases, University of Michigan Health System, Ann Arbor; <sup>15</sup>Department of Emergency Medicine, University of California, Davis; <sup>16</sup>Department of Emergency Medicine, David Geffen School of Medicine, University of California, Los Angeles Medical Center, Sylmar; <sup>17</sup>Department of Veterans Affairs, Hines, Illinois; <sup>18</sup>Department of Pediatrics, Washington University School of Medicine in St. Louis, Missouri; <sup>19</sup>Section on Infectious Diseases, Wake Forest University School of Medicine, Winston-Salem, North Carolina; <sup>20</sup>Department of Veterans Affairs and University of Utah, Salt Lake City; <sup>21</sup>Infectious Diseases, Memorial Sloan Kettering Cancer Center, New York, New York; and <sup>22</sup>Trivedi Consults, LLC, Berkeley, California

Barlam, T. F., Cosgrove, S. E., Abbo, L. M., MacDougall, C., Schuetz, A. N., Septimus, E. J., . . . Trivedi, K. K. (2016). Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America. *Clinical Infectious Diseases*, 62(10), e51-e77. doi:10.1093/cid/ciw118



# Nurse-Driven Antibiotic Stewardship in its Infancy



Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: [www.ajicjournal.org](http://www.ajicjournal.org)

## Practice Forum

### Combating antibiotic resistance: The role of nursing in antibiotic stewardship

*Clinical Infectious Diseases*

## INVITED ARTICLE

CLINICAL PRACTICE: Ellie J. C. Goldstein, Section Editor

### The Critical Role of the Staff Nurse in Antibiotic Stewardship—Unrecognized, but Already

Richard N. Olans,<sup>1</sup> Rita D. Olans,<sup>2</sup> and Alfred DeMaria Jr<sup>3</sup>

*J Infect Prev.* 2011 January ; 12(1): 6–10. doi:10.1177/1757177410389627.

### Covering more Territory to Fight Resistance: Consider the Nurses' Role in Antimicrobial Stewardship

R Edwards<sup>(1),\*</sup>, LN Drumright<sup>(1)</sup>, M Kiernan<sup>(2),(3)</sup>, and A Holmes<sup>(1),(4)</sup>

<sup>1</sup> The National Centre for Infection Prevention and Management, Division of Infection and Immunity, Imperial College London, London, W12 0HS, UK

<sup>2</sup> Infection Prevention Society, UK

<sup>3</sup> Southport and Ormskirk Hospital NHS Trust, UK

<sup>4</sup> Imperial College Healthcare NHS Trust, London, UK



## Spotlight on Leadership

### Keeping Patients Safe

### *Antibiotic Resistance and the Role of Nurse Executives in Antibiotic Stewardship*

Mary Lou Manning, PhD, CRNP, CIC, FAAN



Contents lists available at ScienceDirect

Nurse Education Today

journal homepage: [www.elsevier.com/locate/nedt](http://www.elsevier.com/locate/nedt)

Contemporary Issues

Antibiotic stewardship: The role of clinical nurses and nurse educators



## SPECIAL FEATURE

### Good Nursing Is Good Antibiotic Stewardship

Successful stewardship depends on nurses' ongoing vigilance.

#### ABSTRACT

Resistance to antibiotics has increased dramatically in the United States, with serious associated medical, social, and economic consequences. The most promising approach to this national crisis is a new understanding of the need for the careful and responsible use of antibiotics, both for the benefit of society and for the optimal care of each patient. This multidisciplinary approach, called antimicrobial stewardship, has typically involved specialists but not necessarily nurses, who perform numerous antibiotic-related activities daily and should be an integral part of antimicrobial stewardship programs. In this article, we use patient examples to review several stewardship activities and illustrate how nurses are essential to the appropriate use of antibiotics.

**Keywords:** antibiotic resistance, antimicrobial stewardship, infectious disease, nursing stewardship

# National Recognition of Nurses' Widespread Antibiotic-Related Responsibilities

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WHITE PAPER

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## **Redefining the Antibiotic Stewardship Team: Recommendations from the American Nurses Association/Centers for Disease Control and Prevention Workgroup on the Role of Registered Nurses in Hospital Antibiotic Stewardship Practices**

**Effective Date: 2017**

**Executive Summary**

# National Recognition of Nurses' Widespread Antibiotic-Related Responsibilities

## Suggestions from the Workgroup

The workgroup identified four key questions and developed suggestions to address each of them.

### What are the roles that bedside nurses can and should play in working to improve antibiotic use?

- Obtain appropriate cultures, using proper technique, before antibiotics are started. Understand how the microbiology laboratory processes those samples.
- Use microbiology results to help guide the optimal selection of antibiotics and guide decisions to stop therapy in cases where culture results represent colonization, rather than infection.
- Help inform decisions to start antibiotics promptly at the time early signs of likely bacterial infections, including sepsis, are identified.
- Help ensure that practices to ensure good antibiotic use are embedded in other quality improvement efforts. For example, for sepsis, help ensure that antibiotics are started promptly and then reviewed once additional data, especially cultures, are available.
- Prompt, and participate in, discussions about antimicrobial usage including antibiotic de-escalation by evaluating each patient's clinical status and readiness for change from intravenous to oral therapy, when possible.
- Take a more detailed allergy history, especially around penicillin allergy. Help educate patients and families about what constitutes an accurate antibiotic allergy history.

# LIVE Polling

## Recommendation “A”:

Nurses should play a role in antibiotic stewardship by documenting drug allergy information accurately in the patient medical record.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

# LIVE Polling

## Recommendation “B”:

Nurses should play a role in antibiotic stewardship by encouraging the switch from intravenous to oral antibiotics, as appropriate.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

# LIVE Polling

## Recommendation “C”:

Nurses should play a role in antibiotic stewardship by initiating an antibiotic timeout with prescribers 48 hours after an antibiotic was ordered.

- Strongly agree
- Agree
- Disagree
- Strongly disagree

# Study Aims

1) Explore nurses' current antibiotic-related roles and responsibilities; and 2) gain input on recommendations that have been proposed that advance and formalize nurse-driven antibiotic stewardship.

Funding: This research was funded by the APIC Heroes Implementation Research Scholar Award Program 2017-18, which was supported by an educational grant from BD (PI: Carter)

Carter EJ, Greendyke WG, Furuya EY, Srinivasan A, Shelley AN, Bothra A, Saiman L, Larson EL. (in press) Exploring the nurses' role in antibiotic stewardship: A multisite qualitative study of nurses and infection preventionists. *American Journal of Infection Control*.

# Nurses Can Play a Major Role in Antibiotic Stewardship by:

## **Recommendation “A”**

- Documenting drug allergy information accurately

## **Recommendation “B”**

- Encouraging the safe conversion of IV to PO antibiotics

## **Recommendation “C”**

- Initiating an antibiotic timeout with prescribers



# Methods

- Qualitative study
  - Two urban academic hospitals
    - Pediatric
    - Adult
- Data collection
  - Focus groups & interviews
  - March – June 2017
  - Clinical nurses, nurse managers, infection preventionists
    - Intensive care units & medical surgical units
- Data analysis
  - Conventional content analysis

# Study Participants

Participant Role & Unit	Hospital		Total
	<u>Adult</u>	<u>Pediatric</u>	
<b>Clinical Nurse</b>			
<u>ICU</u>	<b>16</b>	<b>10</b>	<b>26</b>
<u>Medical/Surgical</u>	<b>14</b>	<b>9</b>	<b>23</b>
<b>Nurse Manager</b>			
<u>ICU</u>	<b>0</b>	<b>1</b>	<b>1</b>
<u>Medical/Surgical</u>	<b>2</b>	<b>2</b>	<b>4</b>
<b>Infection Preventionist</b>	<b>5</b>	<b>2</b>	<b>7</b>
<b>Total</b>	<b>37</b>	<b>24</b>	<b>61</b>

# Findings: Nursing Antibiotic-Related Responsibilities

## **Current Responsibilities**

- Administering antibiotics timely
- Knowing the indication for antibiotic
- Educating patients

## **Out-of-scope**

- Matching the bug to the drug
- Ensuring the proper duration of therapy

# Recommendation “A” Findings: Nurses Document Drug Allergy Information Accurately

## **Challenges**

- Perception that the information reported by patients is intended for nurses to document in the medical record
- Focus on documentation rather than interpretation

# Recommendation “A” Findings: Nurses Document Drug Allergy Information Accurately

## Strategy to Overcome Identified Challenges

*“They should definitely initiate a conversation and ascertain more information. I think it’s then up to the physician, and you know, or—and, or the pharmacist to—to see if it’s a really true allergy, or do they want to desensitize the patient.”*

# Recommendation “B” Findings: Nurses Encourage the IV to PO Switch

## **Challenges**

- Knowledge needs
- Prescriber pushback
- Patient-level considerations

# Recommendation “B” Findings: Nurses Encourage the IV to PO Switch

## Strategy to Overcome Identified Challenges

*“Education would be needed for providers and for nursing, on what...those antibiotics would be...this is the same PO, so we could use that.”*

# Recommendation “C” Findings: Nurses Initiate an Antibiotic Timeout

## **Challenges**

- Duplicative work
- Prescriber pushback
- Workflow considerations
- Knowledge gaps



# Recommendation “C” Findings: Nurses Initiate an Antibiotic Timeout

## Strategy to Overcome Identified Challenges

*“Specify and provide guidance on the specific elements of antibiotic management that nurses should review...we need... an algorithm, and we need to educate ourselves, [because] otherwise we’re not going to feel ...empowered.”*

# Discussion

- Identified knowledge needs  
Antibiotic management, in general
  - Nurses' responsibilities related to antibiotics
- Previous work identified additional opportunities for improvement
  - 171 (37%) familiar with phrase antimicrobial stewardship
  - 255 (55%) able to identify a drug intolerance



# Nursing Education Fails to Prepare Nurses to Become Stewards of Antibiotic Use

## Pre-Licensure

*“...Infection control issues, such as drug resistant organisms and management.”*

American Association of Colleges of Nursing. (2008). The Essentials of Baccalaureate Education for Professional Nursing Practice. In American Association of Colleges of Nursing (Ed.). Washington, DC.

## Post-Licensure

State	Requires CE to renew RN license	Number of CE hours to renew RN license	Number of CE hours required for re-entry	CE hours required for HIV/AIDS
Alabama	Yes	24 contact hours for active license	24 hours/2 years <sup>1</sup>	No
Alaska	Yes	30 hours	30 hours	No
Arizona	No	None	60 hrs / 5 yrs re-entry course	No
Arkansas	Yes	15 hrs every 2 yr renewal	20 hours within the past two yrs plus refresher course	No
California	Yes	30 hours within 2 years	30 hrs within past 2 years; after 8 yrs of lapsed status, NCLEX is required	Yes <sup>2</sup>
Colorado	No	None	No	No
Connecticut	No	None	Board discretion for lapsed license	No
Delaware	Yes	30 contact hours biennially	30 hrs for RNs / 15 hrs for APRNs if less than 2yrs, greater than 1 yr	No
District of Columbia	Yes	24 contact hrs in an area relevant to the area of practice within the past 2 yrs	12 hours / year	No
Florida	Yes	24 contact hours within 2 years <sup>3</sup>	1 hour per month if inactive	2 hours HIV/AIDS once, 1 hr of which must be completed prior to first renewal
Georgia	No	None	No	No

American Nurses Association. (2013). *States Which Require Continuing Education for RN Licensure*. Retrieved from <http://www.nursingworld.org/MainMenuCategories/Policy-Advocacy/State/Legislative-Agenda-Reports/NursingEducation/CE-Licensure-Chart.pdf>

# Conclusions

- Nurses are eager to participate in antibiotic improvement activities
- Several challenges to nurse-driven antibiotic stewardship exist
  - Lack of clearly defined roles
  - Knowledge deficits
  - Prescriber pushback
  - Workflow considerations

# Acknowledgements



**APIC**<sup>®</sup>

Association for Professionals in  
Infection Control and Epidemiology

David P. Calfee, MD, MS

Yoko Furuya, MD, MS

William Greendyke, MD

Elaine Larson, PhD, RN, CIC

Lisa Saiman, MD, MPH

Elizabeth Salsgiver, MPH

Alexandra Shelley, MS, FNP-BC

Philip Zachariah, MD, MS

Members of the ANA/CDC Working  
Group Conference

Sharon Morgan, MSN, RN, NP-C

Arjun Srinivasan, MD

**Thank you to the those  
who participated in this  
study!**



Nurses Role in Antibiotic Stewardship  
ANA/CDC Working Group Conference  
July 28, 2016

**Thank you!**

Questions?